

Appl. No. 10/734,927
Amdt. date September 12, 2005
Reply to Office action of May 12, 2005

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Previously Presented) An arc fault detector for detecting arc faults in three phase aircraft power systems, comprising:
three full wave rectifiers each having an output connected to a threshold detector;
a three input comparator connected to an output of each of the threshold detectors; and
a fault verification circuit connected to an output of the three input comparator.
2. (Previously Presented) The arc fault detector of claim 1, wherein the threshold detectors comprise a first comparator having a first input connected to an output of one of the full wave rectifiers, a second input connected to a signal indicative of a predetermined threshold and an output.
3. (Previously Presented) The arc fault detector of claim 2, wherein the threshold detectors further comprise an integrator configured to integrate the output of the first comparator.
4. (Previously Presented) The arc fault detector of claim 1, wherein the three input comparator is configured to generate a signal indicative of the outputs of any two of the threshold detectors differing by more than a predetermined amount.
5. (Previously Presented) The arc fault detector of claim 1, wherein the fault verification circuit comprises:
an integrator connected to the output of the three input comparator; and
a comparator connected to the output of the integrator and configured to generate a signal indicative of the detection of a fault, when the output of the integrator exceeds a predetermined threshold.
6. (Previously Presented) An arc fault detector for detecting arc faults in three phase aircraft power systems, comprising:

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means for generating a signal indicative of each of the three phases;
means for rectifying the generated signals;
means for comparing the three rectified signals; and
means for generating a signal in response to the three rectified signals differing for a time period exceeding a predetermined duration.

7. (Previously Presented) The arc fault detector of claim 6, further comprising:
means for detecting that one of the three rectified signals exceeds a predetermined threshold; and
wherein the means for generating a signal in response to the three rectified signals differing for a time period exceeding a predetermined duration generates a signal if at least one of the three filtered signals exceeds the predetermined threshold.

8. (Previously Presented) A method of detecting arc faults in three phase aircraft power systems, comprising:
detecting at least one of the three phases having a current exceeding a predetermined threshold;
detecting differences between the three phases; and
generating a signal indicative of differences being detected between the three phases for a time period exceeding a predetermined duration.

9. (Previously Presented) The method of claim 8, wherein the detection of differences further comprises:
generating signals indicative of each of the three phases; and
generating a signal indicative of at least two of the three signals differing by more than a predetermined amount.

10. (Previously Presented) The method of claim 9, wherein detection of differences further comprises continuously monitoring the signals indicative of the three phases.

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11. (Previously Presented) The method of claim 9, wherein the detection of differences further comprises continuously sampling the signals indicative of the three phases.

12. (Previously Presented) The method of claim 9, wherein generating a signal indicative of at least two of the three signals differing by more than a predetermined amount, further comprises integrating each of the signals indicative of each of the three phases over at least one cycle.

13. (Previously Presented) The method of claim 12, wherein generating signals indicative of each of the three phases further comprises:

comparing the magnitude of each phase to a predetermined threshold; and

generating a signal for each phase indicative of the magnitude of the signal relative to the threshold.

14. (Previously Presented) The method of claim 8, wherein generating a signal indicative of differences being detected between the three phases for a time period exceeding a predetermined duration further comprises:

generating a signal indicative of the time period during which at least two of the three phases differ by more than a predetermined amount; and

comparing the generated signal to a signal indicative of the predetermined duration.